

REMARKS

Prior to the present response, claim 1-8, 12 and 13 were pending. By way of the above amendments, claims 1 and 5 have been amended to respectively incorporate the features of dependent claims 2 and 6, which have been canceled; claims 12 and 13 have been amended to conform to changes made to the independent claims; and new claims 14-21 have been added. Accordingly, claims 1, 3-5, 7, 8 and 12-21 currently are pending.

The most recent Office Action maintained the rejection of claims 1-8, 12 and 13, under 35 U.S.C. §103 as allegedly being unpatentable over the Sundberg et al. patent (U.S. Patent 5,747,793). Applicants respectfully traverse this rejection, to the extent that it may be considered to apply to the pending amended claims.

In the "Response to Arguments" section on page 4 of the Office Action," the Office did not consider Applicants' arguments concerning differences of the Sundberg et al. patent sensor and the claimed sensor to be convincing. More particularly, in response to Applicants' arguments that the filter 110 and mirror 112 must be regarded as different from the claimed "sensor element," the Office asserts that the filter 110 and mirror 112 of Sundberg et al. could be considered as a part of the sensor. (See, the last paragraph of page 6 to the end of page 8 of the March 22, 2004 response.) While Applicants disagree with this allegation, especially when considering that the Sundberg et al. patent characterizes "a sensor, a movable mirror 112" and "an optical filter 110" as different components (see, for example, column 5, lines 44 and 48), the independent claims have been changed. Specifically, claims 1 and 5 have been amended to respectively include all the features of claims 2 and 6.

In connection with the features of dependent claims 2 and 6, which are now respectfully incorporated in independent claims 1 and 5, the Office Action essentially asserts that the Sundberg et al. patent discloses all claimed features except for compensating for bending of the optical fibre by reference to correction data based on a pre-stored data. It is respectfully submitted, however, that Sundberg et al. does not teach or suggest the claimed combinations including a measuring signal causes optical interference in a cavity associated with the sensor element, as set forth in independent claim 1, and a sensor element comprises a cavity, shaped so as to create optical interference when feeding the measuring signal into the cavity, as recited in independent claim 5.

In setting forth the rejection, the Examiner relies on Figure 5b and column 8, lines 10-25 of Sundberg et al., which describe a Faraday Rotator 502 in combination with a first polarizer 501 and second polarizer 513. More specifically, the Examiner states "Sundberg discloses a rotator 502 (fig. 5b) for varying the amount of light [that reaches] the mirror 512 (fig 5b) ... By varying the amount of light [reaching] the mirror 512, it would have been obvious that the measuring signal would cause optical interference." (See page 3, lines 1-4.) It is respectfully submitted, however, the cited parts of Sundberg et al. do not mention or suggest anything with regard to a "cavity" in which optical interference is caused or created, as recited in independent claims 1 and 5. Rather, the Faraday rotator 502 of Sundberg et al. is situated between a first polarizer 501 and a second polarizer 513, which are orthogonal relative to one another and arranged with the Rotator 502 such that the amount of light reaching a fixed mirror 512 is substantially zero when the rotator is neutral (i.e., when no rotation of the polarized light occurs). (See, column 8, lines 4-11.) There is

no mention in the Sundberg et al. patent of any cavity associated with this Faraday Rotator/polarizer arrangement, much less a cavity in which a measuring signal causes optical interference as claimed.

According to Sundberg et al., a physical parameter being measured causes the Faraday Rotator 502 to rotate polarized light exiting one of the polarizers by an amount corresponding to the parameter. The amount of the sensing light reaching the fixed mirror 512 is controlled based on the amount of the physical parameter. (See, column 8, lines 12-17.) However, the light reaching the fixed mirror 512 in the Sundberg et al. device appears to be attenuated based on an amount of *absorption* by the polarizers 501, 513. Hence, the parts of Sundberg et al. relied upon in the Office Action do not appear to teach or suggest any *optical interference*, much less optical interference in a cavity as claimed.

The Sundberg et al. patent, therefore, fails to teach or suggest the combination of each and every claimed element. Hence, it is respectfully submitted that the rejection fails to establish a *prima facie* case of obviousness. As such, the subject matter recited in independent claims 1 and 5 is considered patentable.

Claims 3, 4, 7, 8, 12 and 13 depend from one of independent claims 1 and 5 and are allowable at least for the reasons pointed out above. Additionally, these dependent claims recite combinations including additional features not taught or suggested in the Sundberg et al. patent.

New claims 14-21 have been added to round out the scope of protection being sought. Support for the subject matter recited in these claims claim is found in the specification, starting at page 5, line 6, for example. It is respectfully submitted

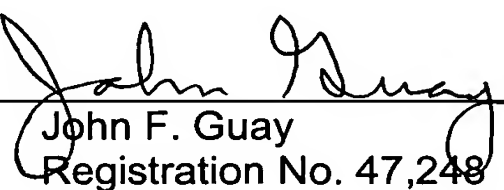
that new claims 14-21 also recite combinations of features not disclosed or suggested in the Sundberg et al. document.

In light of the foregoing, Applicants respectfully request reconsideration and allowance of the above-captioned application. Prompt notification of the same is earnestly solicited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: December 9, 2004



John F. Guay
Registration No. 47,248

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620